Continued...

4 hr day
divided into 4, 8, 16, ... = n
$2/hr raise every hour (or equivilant)

$n = 4$

$$\$_{earned} = \sum_{N=0}^{3} (10 + 2N)\,1 = 52$$

$n = 8$

$$\$_{earned} = \sum_{N=0}^{7} (10 + 1N)\,\tfrac{1}{2} = 54$$

$n = 16$

$$\$_{earned} = \sum_{N=0}^{15} (10 + 0.5N)\,\tfrac{1}{4} = 55$$

$n = 500$

$\$ = 55.969$

n

$$\$_{earned} = \sum_{N=0}^{n-1} \left(10 + \tfrac{8}{n}N\right)\tfrac{4}{n}$$

$$\lim_{n\to\infty} \sum_{N=0}^{n-1} \left(10 + \tfrac{8}{n}N\right)\tfrac{4}{n} = \int (10 + 2t)\,dt$$

$$\$_{earned} = 10t + \tfrac{1}{2}(2)t^2$$

$$t = 4h$$

$$\$_{earned} = 40 + 16 = \$56$$

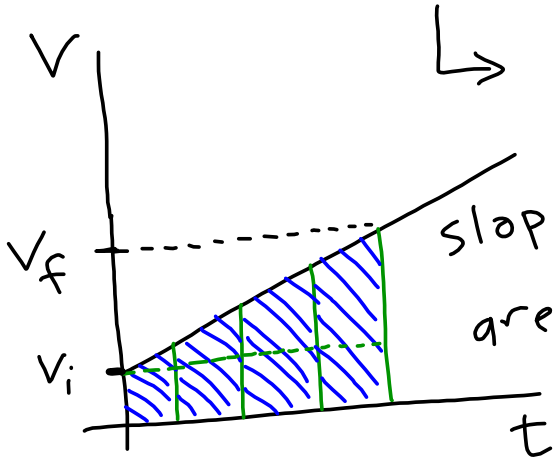
const. a

$$\Rightarrow \boxed{\begin{aligned} V_f &= V_i + at \\ X_f &= X_i + V_i t + \tfrac{1}{2} a t^2 \end{aligned}}$$

Gravitational acceleration:

↳ constant (near the surface of the earth)

↳ $a_g = 9.81\ m/s^2$ down



slope = acceleration

area = distance traveled

$= v_i t + \frac{1}{2}(at)t$